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## Apple IIc Plus: External Pinouts (6/94)

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Security: Everyone

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TOPIC -----

This article gives the pinouts for the following ports for Apple IIc Plus:

- DB-9 Mouse or Joystick Port
- DB-19 Disk Drive Port
- DB-15 Video Expansion Connector
- MiniDin-8 Modem Port (with startup characteristics)
- MiniDin-8 Printer Port (with startup characteristics)

DISCUSSION -----

DB-9 Mouse or Joystick Port

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- 1- MOUSEID\* Mouse identifier: when active, disables NE556 hand controller timer.
  - 2- +5V total current drain from this pin must not exceed 100 mA.
  - 3- GND System Ground.
  - 4- XDIR Mouse X-direction indicator.
  - 5- XMOVE Mouse x-movement interrupt.
  - 6- N.C. Not connected.
  - 7- MSW\* Mouse button.
  - 8- YDIR Mouse Y-direction indicator.
  - 9- YMOVE Mouse Y-movement interrupt.
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- 1- GAMESW1 Switch input 1 (sometimes called paddle button 1).
  - 2- +5V total current drain from this pin must not exceed 100mA.
  - 3- GND System ground.
  - 4- Not Used for hand controller.
  - 5- PDL0 hand controller input. Must be connected to a 150K ohm variable

- resistor connected to +5V.
- 6- N.C. Not connected.
- 7- GAMESW0 Switch input 0 (sometimes called paddle button 0).
- 8- PDL1 hand controller input; must be connected to a 150K ohm variable resistor connected to +5V.
- 9- Not used with hand controller.

#### DB-19 Disk Drive Port

- 1,2,3- Ground.
- 4- 3.5DISK 3.5 or 5.25-inch drive select.
- 5- -12V -12 volt supply.
- 6- +5V +5 volt supply.
- 7- +12V +12 volt supply.
- 8- +12V +12 volt supply.
- 9- DR2 Drive 2 Select.
- 10- WRPTOTECT Write protect input.
- 11- PHASE0 Motor Phase 0 output.
- 12- PHASE1 Motor Phase 1 output.
- 13- PHASE2 Motor Phase 2 output.
- 14- PHASE3 Motor Phase 3 output.
- 15- WREQ Write request.
- 16- HDSEL Head Select.
- 17- DR1 Drive 1 select.
- 18- RDDATA Read data input.
- 19- WDATA Write data output.

Note: Power connectors on this port are for use by the disk drive only.

#### DB-15 Video Expansion Connector

- 1- TEXT Video text signal from TMG; set to inverse of GR, except in double high-resolution mode.
- 2- 14M 14M master timing signal from the system oscillator.
- 3- SYNC\* Displays horizontal and vertical synchronization signal from IOU pin 39.
- 4- SEGB Displays vertical counter bit from IOU pin 4; in text mode, indicates second low-order vertical counter; in graphics mode, indicates low-resolution.
- 5- 1VSOUND One-volt sound signal from pin 5 of the audio hybrid circuit (AUD).
- 6- LDPS\* Video shift-register load enable from pin 12 of TMG.
- 7- WNDW\* Active area display blanking; includes both horizontal and vertical blanking.
- 8- +12V Regulated +12 volts DC; can drive 300mA.
- 9- PRAS\* RAM row-address strobe from TMG pin 19.
- 10- GR Graphics mode enable from IOU pin 2.
- 11- SEROUT\* Serialized character generator output from pin 1 of the 74LS166 shift register.
- 12- NTSC Composite NTSC video signal from VID hybrid chip.
- 13- GND Ground reference and supply.
- 14- VIDD7 From 74LS374 video latch; causes half-dot shift high.
- 15- CREF Color reference signal from TMG pin 3; 3.58 MHz.

Note: The signals at the DB-15 on the Apple IIc are not the same as those at the DB-15 end of the Apple III, Apple II GS, and Macintosh II. Do not attempt to plug a cable intended for one into the other.

Several of these signals, such as the 14 MHz, must be buffered within about 4 inches of the back panel connector--preferably inside a container directly connected to the back panel.

#### MiniDin-8 Modem Port

- 1- DTR Data Terminal Ready (output).
- 2- DSR Data Set Ready (input).
- 3- TD Transmit Data (output).
- 4,6,8- Ground.
- 5- RD Read Data (input).
- 7- N.C. Not connected.

#### Start-up Characteristics

300 baud  
8 data bits  
No parity  
1 stop bit  
No screen echo  
No Line Feed after Carriage Return (no LF after CR)  
No Carriage Returns in output stream  
Command Char= Control-A

#### MiniDin-8 Printer Port

- 1- DTR Data Terminal Ready (output).
- 2- DSR Data Set Ready (input).
- 3- TD Transmit Data (output).
- 4,6,8- Ground.
- 5- RD Read Data (input).
- 7- N.C. Not connected.

#### Start-up Characteristics

9600 baud  
8 data bits  
No parity  
2 stop bits  
80-column line  
No screen echo  
Line Feed after Carriage Return  
Command Char= Control-I

The MiniDin-8 pin configuration is this: As you look at the back of the machine, pin 1 being lower-right, pin 3 middle-right, pin 6 upper-right.

5      4   3  
2      1

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